

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
2 June 2005 (02.06.2005)

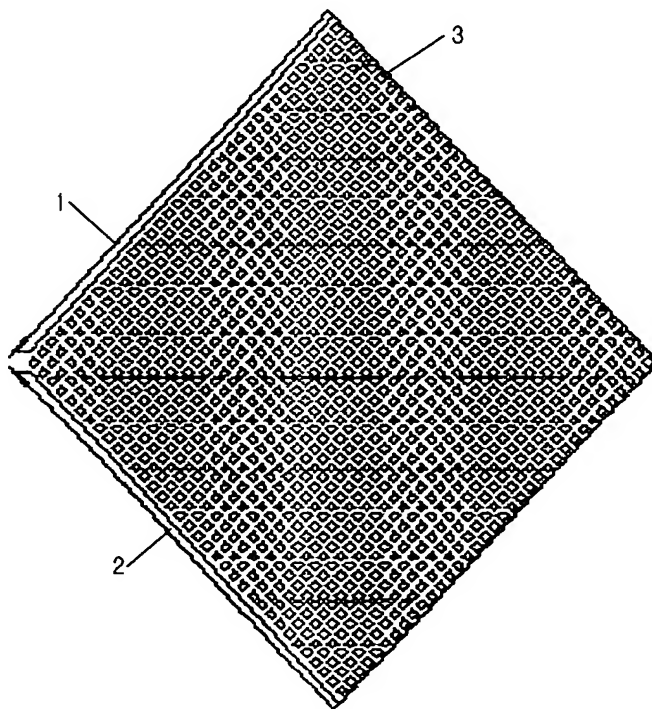
PCT

(10) International Publication Number  
**WO 2005/050785 A1**

- (51) International Patent Classification?: **H01Q 13/00**
- (21) International Application Number:  
PCT/KR2004/002957
- (22) International Filing Date:  
15 November 2004 (15.11.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
2003133969 21 November 2003 (21.11.2003) RU
- (71) Applicants (for all designated States except US): **SAM-SUNG ELECTRONICS CO., LTD.** [KR/KR]; 416 Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 442-742 (KR). **INSTITUTE OF RADIOENGINEERING AND ELECTRONICS OF THE RUSSIAN ACADEMY OF SCIENCES** [RU/RU]; 11 Mokhovaya Str., k. 7, K-9, GSP-9,, 101999 Moscow (RU).
- (72) Inventors; and  
(75) Inventors/Applicants (for US only): **BANKOV, Sergei Evgenjevich** [RU/RU]; Universitetsky prospekt, 21, k. 2, kv. 107, 119330 Moscow (RU). **KALOSHIN, Vadim Anatoljevich** [RU/RU]; Dmitrovskoe shosse, 46, k. 1, dv. 18, 127238 Moscow (RU).
- (74) Agent: **LEE, Keon-Joo**; Mihwa Bldg. 110-2, Myongryun-dong 4-ga, Chongro-gu, Seoul 110-524 (KR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: **PLANAR ANTENNA**



(57) Abstract: The present invention relates to antenna systems. Technical result of the invention is providing operation of two-polarization antenna manufactured on the basis of planar metal-dielectric waveguide in wide range of frequencies. The technical result is achieved by the fact that the antenna comprises a planar metal-plated, at least on one side, dielectric waveguide to the side walls of which two metal waveguides joined with the planar waveguide via periodical array of slots are connected, wherein the array comprises two slots shifted or inclined with respect to each other, and wherein radiating elements having two symmetry planes are placed in nodes of a rhombic mesh on a surface of the planar waveguide.



(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

**Published:**

— with international search report